

What is claimed is:

1. A device comprising:  
a chip;  
means for measuring the temperature of the chip; and  
means for regulating an operating voltage of the chip based on the measured temperature of the chip.
2. The device according to claim 1, wherein the chip is a silicon-based component.
3. The device according to claim 2, wherein the chip is one of a Si component, a Si-germanium component, a gallium arsenide component or other semiconductor component.
4. The device according to claim 1, wherein said means for measuring the temperature of the chip comprises a thermocouple.
5. The device according to claim 1, wherein said means for measuring the temperature of the chip comprises a thermal diode.
6. The device according to claim 1, wherein said means for regulating the operating voltage of the chip comprises an external voltage regulator.
7. The device according to claim 1, wherein said means for regulating the operating voltage of the chip comprises an internal linear/switched voltage regulator.

8. The device according to claim 1, wherein said means for regulating the operating voltage of the chip changes the operating voltage of the chip to a minimum allowed value when the sensed temperature of said means for measuring the temperature of the chip senses a chip temperature that is less than a predetermined value.

9. The device according to claim 8, wherein said means for regulating the operating voltage comprises firmware.

10. A device comprising:

a chip;

a thermometer that outputs the temperature of said chip;

a voltage regulator coupled to the output of the thermometer and to the chip

wherein said voltage regulator reduces the operating voltage of the chip when the output of the thermometer is less than a threshold temperature.

11. The device according to claim 10, wherein the chip comprises one of silicon, silicon germanium, gallium arsenide, or other semiconductor material.

12. The device according to claim 10, wherein said thermometer comprises a thermal diode.

13. The device according to claim 10, wherein said voltage regulator comprises an external voltage regulator.

14. The device according to claim 10, wherein said voltage regulator comprises an internal linear/switched voltage regulator.

15. The device according to claim 10, wherein said voltage regulator reduces the operating voltage of the component to a minimum allowed value.

16. The device according to claim 10, wherein said voltage regulator regulates the operating voltage of the chip using firmware.

17. The device according to claim 10, further comprising a card on which at least two chips are disposed where the thermometer measures the temperature of each chip and the voltage regulator reduces the operating voltage of each respective chip when the measured temperature of the respective chip is less than a threshold temperature.

18. The device according to claim 10, further comprising a card on which at least two chips are disposed where the thermometer comprises an individual thermometer to measure the temperature of each chip and the voltage regulator comprises individual chip specific voltage regulators that are respectively associated with one of the at least two chips so that the operating voltage of the at least two chips is reduced when the output of the respective, individual thermometer is less than a threshold temperature.

19. The device according to claim 10, further comprising a card on which at least two chips are disposed where the thermometer measures the temperature of each chip and the voltage regulator comprises individual chip specific voltage regulators that are

respectively associated with one of the at least two chips so that the operating voltage of the at least two chips is reduced when the output of the respective, individual thermometer is less than a threshold temperature.

20. The device according to claim 19, wherein a first voltage regulator reduces the operating voltage of at least two chips and a second voltage regulator reduces the operating voltage of another chip.

21. A method, comprising:

measuring the temperature of a chip while the chip is ON; and  
reducing an operating voltage delivered to the chip when the measured temperature of the chip drops below a predefined threshold temperature.

22. The method of claim 21, wherein the predefined threshold temperature is selected to be a chip temperature below which the chip is presumed to be in an idle state.

23. The method according to claim 22, wherein the reduced operating voltage is changed to a nominal operating voltage, when the chip returns to a normal operating mode.

24. A machine-readable medium that provides instructions, which when executed by a computing platform, cause said computing platform to perform operations comprising a method of:

measuring the temperature of a chip while the electrical chip is ON; and

reducing an operating voltage delivered to the chip when the measured temperature of the chip drops below a predefined threshold temperature.

25. The machine-readable medium of claim 24, wherein the predefined threshold temperature is selected to be a chip temperature below which the chip is presumed to be in an idle state.

26. The machine-readable medium according to claim 24, wherein the reduced operating voltage is changed to a nominal operating voltage, when the chip returns to a normal operating mode.